

Appl. No. 10/789,706
Amdt. Dated Mar. 30, 2005
Reply to Office Action of Feb. 22, 2005

REMARKS

By the above amendment, applicant has canceled claims 1-5, 7-9, and 11 without prejudice.

Claim Rejections Under 35 U.S.C. 102

Claims 1-2 and 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiu (US 5,858,475).

Examiner states that "Chiu discloses a method for coating photoresist on a substrate comprising: forming grooves/recesses and protrusions on a substrate; applying photoresist on the substrate; and vibrating the substrate so that the photoresist forms a uniform coating over the grooves/recesses and protrusions. Chui uses an ultrasonic vibrator to vibrate the photoresist coating, and ultrasonic vibration waves would vibrate the substrate in both vertical and horizontal directions..."

In response to this rejection, applicant has canceled claims 1-2, and 7-9. Applicant respectfully traverses the rejection as follows:

Amended claim 10 recites "**applying photoresist on the substrate by a plurality of spray nozzles respectively located right above apexes of the protrusions.**"

Applicant asserts that Chiu merely discloses a spin coating method coupling an ultrasonic wave generator to either the chuck or the spindle of the chuck for improving the planarization of a photoresist. Chiu fails to teach all the

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limitations of the method for coating photoresist as set out in amended claim 10.

Applicant further asserts that there is nothing in the cited reference that teaches or suggests to one of ordinary skill in the art that it might or should provide the methods of amended claim 10. Moreover, the methods of amended claim 10 produce new and unexpected results. That is, the photoresist is evenly distributed. Accordingly, amended claims 10 is submitted to be patentable over Chiu under both 35 U.S.C. 102(b) and 35 U.S.C. 103. Reconsideration and withdrawal of the rejection and allowance of amended claim 10 are respectfully requested.

Claim Rejections Under 35 U.S.C. 103

Claims 4-5 and 11 are understood to be rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu as applied to claims 1-2 and 7-10 above, and further in view of Takamori et al (US 6,635,113).

Applicant has canceled claims 4-5, and 11.

Claims 1-3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minoura et al (US 2003/0053015) in view of Chiu.

Examiner in the first Office action mailed Sep. 9, 2004 essentially states that "Minoura et al discloses a method of making an array having grooves/recesses and protrusions that are contiguous and parallel to each and which have a triangular cross section. Chiu is cited for its teaching of how to form a uniform resist coating on a non-uniform substrate... It would have been obvious for one having ordinary skill in the art to have used the resist coating and vibrating method of Chiu in order to provide a uniform resist mask coating on the array of Minoura et

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al..."

In response to the rejection, applicant has canceled claims 1-3, and 7-9, and respectfully traverses as follows:

Amended claim 10 recites "applying photoresist on the substrate by a plurality of spray nozzles respectively located right above apexes of the protrusions."

Applicant acknowledges that Minoura et al discloses a method of making an array having grooves/recesses and protrusions. However, Chiu merely discloses a spin coating method coupling an ultrasonic wave generator to either the chuck or the spindle of the chuck for improving the planarization of a photoresist. Minoura et al in view of Chiu fail to teach or suggest the limitation "applying photoresist on the substrate by a plurality of spray nozzles respectively located right above apexes of the protrusions" as set out in amended claim 10. Thus, the combination of the references does not teach or suggest a method for coating photoresist comprising all the limitations recited in amended claim 10.

In summary, there is nothing in the cited references that teach or suggest to one of ordinary skill in the art that they might or should provide the methods of amended claim 10. Furthermore, the methods of amended claim 10 produce new and unexpected results. That is, the photoresist is evenly distributed. Accordingly, amended claim 10 is submitted to be patentable over Minoura et al in view of Chiu. Reconsideration and withdrawal of the rejection and allowance of amended claim 10 are respectfully requested.

Claims 1, 4, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akram et al (US 5,609,995) in view of Parodi et al (US

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5,798,140).

Examiner essentially states that "Akram et al discloses a method of coating photoresist onto a substrate, ... [which] as a whole is generally directed to vibrating the substrate in order to spread coating material to form an even coating over the substrate's uneven surface. Parodi et al teaches that the vibrating is performed by either oscillation or orbital rotation, both of which involve vibrating the substrate in the horizontal direction."

In response to the rejection, applicant has canceled claims 1, 4, and 8, and respectfully traverses as follows:

Amended claim 10 recites "applying photoresist on the substrate by a plurality of spray nozzles respectively located right above apexes of the protrusions."

Applicant acknowledges that Akram et al discloses a method of coating photoresist onto a substrate, which as a whole is generally directed to vibrating the substrate in order to spread coating material to form an even coating over the substrate's uneven surface. However, as indicated by Examiner, Parodi et al merely teaches that the vibrating is performed by either oscillation or orbital rotation, both of which involve vibrating the substrate in the horizontal direction. Akram et al in view of Parodi et al fails to teach or suggest the limitation "applying photoresist on the substrate by a plurality of spray nozzles respectively located right above apexes of the protrusions" as set out in amended claim 10. Thus, the combination of the references does not teach or suggest a method for coating photoresist comprising all the limitations recited in amended claim 10.

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In summary, there is nothing in the cited references that teach or suggest to one of ordinary skill in the art that they might or should provide the methods of amended claim 10. Furthermore, the methods of amended claim 10 produce new and unexpected results. That is, the photoresist is evenly distributed. Accordingly, amended claim 10 is submitted to be patentable over Akram et al in view of Parodi et al. Reconsideration and withdrawal of the rejection and allowance of amended claim 10 are respectfully requested.

In view of the foregoing, the present application as claimed in the pending claims is considered to be in a condition for allowance, and an action to such effect is earnestly solicited.

Respectfully submitted,
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